**IT Applications Unit 3, AOS 2, Organisations and Data Management**

**Database Design Tools, p 106**

**Naming Conventions**

1. List the naming conventions that can be applied to a database.  
   You may use things such as tbl, cus, qry, frm, rpt to determine what type of field or object you are using within the database. Table uses tbl, Query uses qry and etc...

**Entity-Relationship Diagram, (ERD)**

1. Describe the nature of these diagrams.  
   An ERD is used by database designers to establish the interrelationships between different data elements. It usually shows the subparts of tables and how those entities relate to each other.
2. Draw the symbols used to represent, entities, relationships and attributes.  
   Boxes represent entities.  
     
   Diamonds represent relationships.  
     
   Ovals represent attributes of entities.
3. List the three steps to create an ERD.  
   In order to create an ERD, first identify the entities, then define the relationships and finally add the attributes to each entity.

**Data Structure Table**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Field | Data Type | Field Size | Input Mask | Caption | Description | Validation Rule | Validation Text |
| cliClientID | Text | 4 |  | Client ID No. | Client’s Individual assigned code | Between 1000 and 9999 | Client ID number must be between 1000 and 9999 inclusive |
| cliLastName | Text | 30 |  | Last Name | Client’s Last Name |  |  |
| cliFirstName | Text | 30 |  | First Name | Client’s First Name |  |  |
| cliAddress | Text | 60 |  | Address | Client’s Street Address |  |  |
| cliSuburb | Text | 20 |  | Suburb | Client’s Suburb |  |  |

1. Draw a diagram of the data structure table which is used to design a new database.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Field | Data Type | Field Size | Input Mask | Caption | Description | Validation rule | Validation text |
| cliClientID | Text | 4 |  | Client ID no. | Client’s individual assigned code | Between 1000 and 9999 | Clent ID number must be between 1000 9999 inclusive |
| cliLastName | Text | 30 |  | Last Name | Client’s Last Name |  |  |
| cliFirstName | Text | 30 |  | First Name | Client’s First Name |  |  |
| cliAddress | Text | 60 |  | Address | Client’s street address |  |  |
| cliSuburb | Text | 20 |  | Suburb | Client’s suburb |  |  |
| cliPostCode | Text | 4 | - | Postcode | Client’s postcode |  |  |
| cliPhone | Text | 20 | (99) 9999 9999 | Telephone no. | Client’s phone number |  |  |

1. Note: database tables cannot hold formulas.

**Data Structure diagram**

1 What is the purpose of this diagram?  
The purpose of this diagram is to indicate the relationship between the specific tables of the planned database so that the developer will know how the tables should be linked.

**Query Design**

What is a query?  
A query is a filter used to keep only those records that meet the query criteria.

Distinguish between a primary and a secondary sort.  
A Primary sort is normally the first sort that is undertaken, with the secondary sort sorting that data a step further. For example, the city name will be the primary sort and the street will be the secondary sort (e.g. Melbourne is the primary sort and Collins Street is the secondary sort).

Read the query criteria that can be used, including symbols, plain text, \*? Wildcards, etc.

**Layout diagram**

What does a layout diagram involve?  
A layout diagram involves sketching what the input form or what the output form of the solution will look like.

List what is contained on a layout diagram.  
Location of elements: headings, labels and fields.  
Formatting details for all elements: Font type, size and style an options for selected lists.  
Formulas to be added to a form or a report.

**Test Data**

1. When is a set of test data prepared?  
   A set of test data is prepared within the design stage, used during development to ensure that the solution is functioning properly.
2. What is the role of the test data?  
   The role of the test data is to be used in place of real data during the development stage to test whether the solution is functioning correctly. Once it has been found to be functioning correctly then the real data is used in place of it.

**Validating data**

List the available electronic validation checks in the software.  
Range checks, spell checking, grammar checking, predefined lists, data type checks, input masks, and alignment and IIF statements.

What is an input mask?  
An input mask is a set of characters that control what you can and cannot enter in a field. Because Masks force you to enter data in specific ways, input masks provide a large amount of data validation. This means that they can help prevent users from making errors by entering invalid data (such as phone number in a date field). In addition, they can help ensure that users enter data in a consistent way. Consistency of data input can make data easier to find and read.